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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/004,120 | 12/06/2001 | Daniel Joseph Wolff | 550-292 | 8027 |

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| EXAMINER | |
|---|---|
| AVELLINO, JOSEPH E | |
| **ART UNIT** | **PAPER NUMBER** |
| 2143 | |

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/004,120 | WOLFF ET AL. | |
| | Examiner | Art Unit | |
| | Joseph E. Avellino | 2143 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. Claims 1-45 are pending in this examination; claims 1, 10, 16, 31, and 40 independent.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-12, 16-27, and 31-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (USPN 6,760,765) (hereinafter Asai) in view of Hailpern et al. (USPN 6,275,937) (hereinafter Hailpern).

4. Referring to claim 1, Asai discloses a load balancing device (Figure 1, ref. 20) for balancing the load across a plurality of proxy devices (i.e. cache servers, Figure 1, ref. 101, 102, 10n), the computer network having a plurality of client devices (terminals, Figure 1, ref. 41-4n) arranged to issue access requests using a dedicated file access protocol to the file storage device (content server, ref. 30) in order to access files stored on the file storage device, and comprising:

a client interface for receiving an access request issued to the file storage device using the dedicated file access protocol (Figure 1, ref. 21; col. 12, lines 38-48);

load balancing logic for applying a predetermined load balancing routine to determine which proxy device to direct the access request (col. 15, line 66 to col. 16, line 56);

a proxy device interface for sending the access request to the proxy device determined by the load balancing logic, each proxy device being coupled to the file storage device (Figure 1, all; col. 15, line 66 to col. 16, line 66).

Asai does not specifically state that the proxy devices are arranged to perform malware scanning of files stored within a file storage device. In analogous art, Hailpern discloses another load balancing proxy server system which is arranged to perform malware scanning (i.e. virus scanning) of files stored within a file storage device (col. 11, lines 16-60). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Hailpern with Asai since Asai discloses that the number of streams currently being distributed by the cache server can be reported to the cluster control unit 21, however other methods can be implemented

(col. 24, lines 55-67). This would lead one of ordinary skill in the art to search for other methods of communicating load distribution information to the load balancing unit, eventually finding the system of Hailpern and its novel system of communicating load level information using the PICS protocol (col. 10, lines 40-64).

5. Referring to claim 2, Asai in view of Hailpern disclose the invention substantively as described in claim 1. Asai in view of Hailpern do not specifically disclose the dedicated file access protocol is the SMB protocol and the access requests are SMB calls issued to the file storage device. "Official Notice" is taken that both the concepts and advantages of providing for access requests using the SMB protocol are well known and expected in the art. It would have been obvious to one of ordinary skill in the art to incorporate the teaching of the SMB protocol to the combined system of Asai and Hailpern in order to provide another method to access the file storage system, thereby increasing the availability of the system to other devices using this protocol.

6. Referring to claim 3, Asai in view of Hailpern disclose the invention substantively as described in claim 1. Asai in view of Hailpern do not specifically disclose the dedicated file access protocol is the NFS protocol and the access requests are NFS calls issued to the file storage device. "Official Notice" is taken that both the concepts and advantages of providing for access requests using the NFS protocol are well known and expected in the art. It would have been obvious to one of ordinary skill in the art to incorporate the teaching of the NFS protocol to the combined system of Asai and

Hailpern in order to provide another method to access the file storage system, thereby increasing the availability of the system to other devices using this protocol.

7. Referring to claim 4, Asai in view of Hailpern disclose the invention substantively as described in claim 1. Asai in view of Hailpern do not specifically state that the load balancing is arranged to poll each of the plurality of proxy devices and the access request to be sent to the first responding proxy device. "Official Notice" is taken that both the concept and advantages of providing for first response request handling is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to provide for first response request handling since Asai discloses that other methods of load balancing can be used (col. 24, lines 55-67), which would lead one of ordinary skill in the art to search for other methods of load balancing, eventually learning through common knowledge of the use of first response request handling.

8. Referring to claim 5, Asai in view of Hailpern disclose the invention substantively as described in claim 1. Asai in view of Hailpern do not specifically state that the load balancing is to apply a "round-robin" system of allocation. "Official Notice" is taken that both the concept and advantages of providing for round-robin request handling is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to provide for first response request handling since Asai discloses that other methods of load balancing can be used (col. 24, lines 55-67), which would lead one of ordinary skill in the art to search for other methods of load balancing, eventually learning

through common knowledge of the advantages of round-robin request handling in a distributed allocation system.

9. Referring to claim 6, Asai discloses the proxy device interface is arranged to receive a ready signal from each proxy device in said plurality indicating that proxy device is ready to receive an access request, the load balancing routing being arranged to refer to said ready signals when determining to which proxy device to direct a particular access request (col. 17, lines 10-47).

10. Referring to claim 7, Asai discloses each device is assigned an identifier (i.e. IP address, an inherent feature of any network), and the load balancing device is assigned the same identifier as is assigned to the file storage device (an inherent feature of a server-side proxy farm is that the gateway has the address on the Internet which is used for the content server, thereby ensuring that the load balancer is not bypassed to get to the content server), the client interface being connectable to a communication infrastructure (Figure 1, ref. 51) to enable communication between the load balancing device and said client devices, while the plurality of proxy devices are connectable to the proxy device interface (Figure 1, ref. 52), and the file storage device is connectable to each proxy device (Figure 1, ref. 53), such that the file storage device 30 is only accessible by said client devices 41-4n via said load balancing device 20 and one of said proxy devices 101-10n (col. 12, lines 38-67).

11. Referring to claim 8, Asai in view of Hailpern disclose the invention substantively as described in the claims above. Asai in view of Hailpern do not specifically disclose a plurality of file storage devices and the load balancing device being assigned multiple identifiers corresponding to the identifiers of the storage devices. However it has been held that it would be obvious to replicate features to produce repeated results. See St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 (7th Cir. 1977). Furthermore it is well known that a device may have multiple addresses assigned to itself (i.e. a cache server may cache hits from a plurality of addresses mutually exclusive of any other server on the network). By this rationale it would have been obvious to provide multiple addresses for file storage devices in order to handle services pertaining to those servers.

12. Referring to claim 9, it is inherent to the system of Asai in view of Hailpern that each device is assigned an identifier (i.e. MAC address) unique from all others. Without this, network communications would be impossible since no computer would receive information directed to the computer.

13. Claim 10 is rejected for similar reasons as stated above. Furthermore Hailpern discloses processing logic for causing selected malware scanning algorithms to be executed to determine whether the file identified by the access request is to be considered as malware (col. 10, line 11 to col. 62).

14. Referring to claim 11, Asai discloses the invention substantively as described in claim 10. Asai does not disclose determining which malware scanning algorithms should be selected for a particular file, each proxy device further comprising a scanning engine to execute the malware scanning algorithms by the processing logic. In analgous art, Hailpern discloses another proxy load balancing system which includes determining which malware scanning algorithms (i.e. IBM AntiVirus, processor type 15; or Microsoft Anti-Virus, processor type 5) should be selected for a particular file, each proxy device further comprising a scanning engine (Figure 3, ref. 2040) to execute the malware scanning algorithms by the processing logic (Figure 3; col. 10, line 11, to col. 11, line 65). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Hailpern with Asai since Asai discloses that the number of streams currently being distributed by the cache server can be reported to the cluster control unit 21, however other methods can be implemented (col. 24, lines 55-67). This would lead one of ordinary skill in the art to search for other methods of communicating load distribution information to the load balancing unit, eventually finding the system of Hailpern and its novel system of communicating load level information using the PICS protocol (col. 10, lines 40-64).

15. Referring to claim 12, Asai in view of Hailpern discloses the invention substantively as described in claim 10. Asai in view of Hailpern further disclose each proxy device further comprises a file cache for storing files previously accessed by the client devices, upon receipt of an access request identifying a file to be read from the

file storage device, the processing logic being arranged to determine whether the file identified by the access request is stored in the file cache and if so return the file to the client device via the load balancing device without communicating with the file store device via the second interface (Asai, Figure 3, ref. S124; col. 16, lines 44-63).

16. Claims 16-27, 31-42 are rejected for similar reasons as stated above.

Claims 13, 28, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai in view of Hailpern as applied to the claims above, and further in view of Sathyanarayan et al. (USPN 6,304,904) (hereinafter Sathyanarayan).

17. Referring to claim 13, Asai in view of Hailpern disclose the invention substantively as described in claim 12. Asai in view do not specifically state that the file cache is arranged only to store files which have been determined not to be considered as malware. In analogous art, Sathyanarayan discloses another internet proxy system wherein the file cache is arranged only to store files which have been determined not to be considered as malware (i.e. scan the stream for predetermined content, and delete it if found, and then cache the entry) (col. 5, lines 23-32). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Sathyanarayan with Asai and Hailpern since Hailpern discloses maintaining statistics regarding the reliabilities of the content sources and other aspects of the invention (col. 6, lines 1-5), however remains silent on what statistics are kept and how they are used.

This would lead one of ordinary skill in the art to find other methods of statistical record keeping in a proxy server system, eventually finding the system of Sathyanarayan and its novel invention of collecting statistics from network devices and maintaining log files containing one or more entries associated with each request serviced (e.g. abstract).

18. Claims 28 and 43 are rejected for similar reasons as stated above.

Claims 14, 15, 29, 30, 44, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai in view of Hailpern as applied to the claims above, and further in view of Webb et al. (US 2002/00833342) (Hereinafter Webb).

19. Referring to claim 14, Asai in view of Hailpern disclose the invention substantively as described in claim 10. Asai in view of Hailpern do not disclose the system is arranged to determine predetermined attributes, and to send those predetermined attributes to the file storage device to perform a validation check, only allowing those with sufficient rights to view the file. Webb discloses an authenticating network wherein the system is arranged to determine predetermined attributes (i.e. credentials in the form of a secure cookie), and to send those predetermined attributes to the file storage device to perform a validation check (i.e. check out the cookie stored on the client device), only allowing those with sufficient rights to view the file (p. 5, ¶ 48). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Webb with Asai and Hailpern to allow a form of

security to the system, thereby reducing the likelihood of attacks from malicious users and attempts to hijack the server system.

20. Referring to claim 15, Asai in view of Hailpern disclose the invention substantively as described in claim 10. Asai in view of Hailpern do not disclose comprising a user cache for storing the attributes. Webb discloses an authenticating network which includes a user cache for storing the attributes (i.e. a secure cookie) (p. 5, ¶ 48). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Webb with Asai and Hailpern to allow a form of security to the system, thereby reducing the likelihood of attacks from malicious users and attempts to hijack the server system.

21. Claims 29, 30, 44, and 45 are rejected for similar reasons as stated above.

***Conclusion***

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

23. Ji et al. (USPN 5,889,943) discloses email virus detection and elimination.

24. Gupta (USPN 6,446,109) discloses application computing environment.

25. Bowman-Amuah (USPN 6,742,015) discloses base services patterns in a netcentric environment.

26. Yates et al. (USPN 6,167,438) discloses distributed caching, prefetching, and replication.

27. Minkin et al. (USPN 6,826,698) discloses computer program product rule for rule based network security policies.

28. Wu et al. ("Load Balancing and Hot Spot Relief for hash Routing among a Collection of Proxy Caches" Proceedings on Distributed Computing Systems IEEE, 4 June 1999, pp. 536-543).

29. Spare, Ian ("Deploying the Squid Proxy Server on Linux" Linux Journal, March 2001, article no. 5).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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JEA
January 12, 2005

BUNJOB JAROENCHONWANIT
PRIMARY EXAMINER